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(54) Humanized anti-human fas antibody

(57) The invention provides humanised anti-human Fas antibodies capable of inducing apoptosis in cells expressing Fas and which are useful in the treatment of

autoimmune disease and chronic rheumatoid arthritis.
In addition, the invention provides DNA encoding the variable regions of the H and L chain of such antibodies and methods for humanising antibodies.

EP 0 866 131 A3



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EUROPEAN SEARCH REPORT

Application Number

EP 98 30 2113

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
X	WO 92 22653 A (GENENTECH INC) 23 December 1992 (1992-12-23) * page 11, line 19-25 * * page 26, line 23 - page 28, line 5 * * page 48, line 20 - page 49, line 17 * * page 50, line 14 - page 51, line 10 * * example 2 *	1-6,8-17	C12N15/62 C07K16/00 C07K16/28 C12N15/70 C12N1/21 A61K39/395
Y	---	7,18-20, 29-44	
Y	EP 0 709 097 A (SANTEN PHARMA CO LTD ;LLT INST CO LTD (JP)) 1 May 1996 (1996-05-01) * page 4, line 3-14 * * page 3, line 54 - page 5, line 8 * * Claims *	7,18-20, 29-44	
X	KETTLEBOROUGH C A ET AL: "HUMANIZATION OF A MOUSE MONOCLONAL ANTIBODY BY CDR-GRAFTING: THE IMPORTANCE OF FRAMEWORK RESIDUES ON LOOP CONFORMATION" PROTEIN ENGINEERING, vol. 4, no. 7, 1 October 1991 (1991-10-01), pages 773-783, XP002030588 ISSN: 0269-2139 * abstract * * figures 4,5 *	1-6,8-17 --- -/-	TECHNICAL FIELDS SEARCHED (Int.Cl.6) C07K
The present search report has been drawn up for all claims			
Place of search	Date of completion of the search	Examiner	
THE HAGUE	20 October 1999	Covone, M	
CATEGORY OF CITED DOCUMENTS			
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EUROPEAN SEARCH REPORT

Application Number

EP 98 30 2113

DOCUMENTS CONSIDERED TO BE RELEVANT		
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim
X	FOOTE J ET AL: "ANTIBODY FRAMEWORK RESIDUES AFFECTING THE CONFORMATION OF THE HYPERCARLABLE LOOPS" JOURNAL OF MOLECULAR BIOLOGY, vol. 224, no. 2, 1 January 1992 (1992-01-01), pages 487-499, XP000564649 ISSN: 0022-2836 * page 488, left-hand column, paragraph 2 - page 489, left-hand column, paragraph 1 * * figure 1 *	1-6,8-17
A	DATABASE EMBL, PIR2: "Accession number: S37768" RESIDUES: 1-453, XP002119669 * the whole document * & HARINDRANATH N ET AL.: "Comparison of complete nucleotide sequence of the human IgM heavy chain constant region of polyreactive and monoreactive antibodies" MOL. IMMUNOL., vol. 30, 1993, pages 111-2,	21-28
A	WO 95 10540 A (IMMUNEX CORP) 20 April 1995 (1995-04-20) * claims 1,19 * * page 2, line 6-17 *	1-44
P,X, L	EP 0 799 891 A (SANKYO CO) 8 October 1997 (1997-10-08) * page 2, line 48 - page 3, line 25 * * page 6, line 39 - page 7, line 26 * * page 9, line 6.13 * * claims 1,9,20,32-35 *	1-20, 29-44 -/-
The present search report has been drawn up for all claims		
Place of search	Date of completion of the search	Examiner
THE HAGUE	20 October 1999	Covone, M
CATEGORY OF CITED DOCUMENTS		
X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons S : member of the same patent family, corresponding document



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EUROPEAN SEARCH REPORT

Application Number
EP 98 30 2113

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
T	<p>DATABASE CHEMABS 'Online! CHEMICAL ABSTRACTS SERVICE, COLUMBUS, OHIO, US SERIZAWA, NOBUFUSA: "Trials on the development of drug by an novel anti- Fas monoclonal antibody" retrieved from STN Database accession no. 130:266049 HCA XPO02119670 * abstract * & SAISHIN IGAKU (1999), 54(4), 917-924 , -----</p>	I-44	
			TECHNICAL FIELDS SEARCHED (Int.Cl.6)
<p>The present search report has been drawn up for all claims</p>			
Place of search	Date of completion of the search	Examiner	
THE HAGUE	20 October 1999	Covone, M	
CATEGORY OF CITED DOCUMENTS		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons S : member of the same patent family, corresponding document	
X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document			

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ON EUROPEAN PATENT APPLICATION NO.**

EP 98 30 2113

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The members are as contained in the European Patent Office EDP file on
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20-10-1999

Patent document cited in search report		Publication date		Patent family member(s)	Publication date
WO 9222653	A	23-12-1992		AU 675916 B AU 2250992 A CA 2103059 A EP 0590058 A EP 0940468 A JP 6508267 T WO 9404679 A US 5821337 A	27-02-1997 12-01-1993 15-12-1992 06-04-1994 08-09-1999 22-09-1994 03-03-1994 13-10-1998
EP 0709097	A	01-05-1996		CA 2158822 A JP 8208515 A	28-03-1996 13-08-1996
WO 9510540	A	20-04-1995		AU 705114 B AU 7978494 A CA 2174132 A EP 0723556 A JP 9503672 T NZ 275711 A US 5620889 A US 5830469 A	13-05-1999 04-05-1995 20-04-1995 31-07-1996 15-04-1997 25-03-1998 15-04-1997 03-11-1998
EP 0799891	A	08-10-1997		AU 1655297 A CA 2201185 A CN 1167115 A CZ 9700963 A HU 9700676 A JP 9322796 A NO 971448 A NZ 314496 A	09-10-1997 01-10-1997 10-12-1997 15-10-1997 28-01-1998 16-12-1997 02-10-1997 25-02-1999

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